AMQ International's

STRATEGIC # 314 ASSET MANAGEMENT

April 18th 2011

Who should make 'strategic' decisions?

Even more to enjoy!

Penny

Dr Penny Burns, Editor
AMQ International
08 8359 0559
www.amqi.com

WHAT IS A STRATEGIC DECISION?

A Canadian Asset Manager wrote recently:

> "We like to call asset management the overall umbrella where we undertake strategic, tactical and operational AM.
>
> **Strategic AM > Levels of Service and AM policy & strategy, funding etc…**
>
> **Tactical AM > Risk and Triple bottom line tools, business cases, prioritization**
>
> **Operational AM > Asset registers, condition assessments, valuation**

Strategic Asset Management has a focus on outcomes, and so he was wondering whether he should propose defining "strategic asset management" as based on outcomes (LOS, RISK, COST).

My reaction was that, whilst OK, this might not be necessary, since his Strategic AM definition already has an implied outcomes focus. Indeed, since outcomes and outputs are so readily confused by many, it could be wiser not to use this term in a definitional context.

Tactical Asset Management. Normally adding the extra tactical level means that instead of only one 'grey area' (between strategic and operational) there are now two. So I also liked his use of 'tactical' to refer to the many tools that we have now developed to help us make the strategic decisions. I would include Life Cycle Costing, Condition Audits, Root Cause techniques and others in this set.

Instead of using 'outcomes' I suggested he think

> **Strategic Asset Decisions are those asset decisions made with the improvement of the organisation in mind, and**
>
> **Operational Asset Decisions are those made with the asset in mind.**

Another clue is that

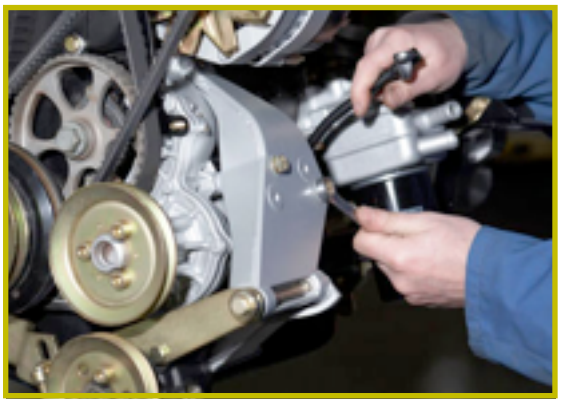
> **Strategic Decisions are concerned with whole asset portfolios**
>
> **Operational Decisions are concerned with sections of portfolios or individual assets**

Keywords: Strategic AM, Operational AM, Tactical AM, Outcomes, Portfolios

ASSET MANAGEMENT and TRADITIONAL MAINTENANCE - MAKING THE DISTINCTION:

In 1987, as this executive summary shows, this was a key AM issue. Perhaps it still is?

The distinction between maintenance and asset management occurred early in the history of AM as can be seen in this 1987 document. Later, when maintenance increasingly took on the title of asset management, the terms 'operational AM' and 'strategic AM' as used in the article above "What is Strategic AM?" came into play.



This is the Executive Summary from a presentation I made to the National Public Works Committee Working Party on Asset Management, Adelaide, June 21st 1989. There are 4 themes, all related to understanding the relationship between Asset Management and Maintenance. This is exactly as written in 1989 (except for explatory commentary added in italics)

MAINTENANCE OR ASSET MANAGEMENT?

The Maintenance task is to keep assets up to a certain standard.

- the Asset Management task is to **achieve the right stock of assets with the most appropriate standards.**

Maintenance looks back, preserving assets, preserving standards.

- Asset Management **looks forward, changing assets, changing standards.**

Maintenance looks at what has to be done to an asset.

- Asset management is concerned with **what the asset does.**

Maintenance focuses on supply of technical services and excellence.

- Asset Management focuses on **customer needs and value for money.**

MAINTENANCE PLANNING

Rules of thumb, e.g. percentage of preventative: breakdown, need to be questioned.

Priority Systems have merit, e.g.

Category A = Assets for which failure would have costs so high that failure is not to be tolerated = overmaintain if necessary (e.g. bridges) IDEAL Preventative Breakdown Ratio = 100% Preventative, 0% Breakdown.

Category B = Assets for which failure has no significant cost penalties, e.g. small reticulation water mains, rule "don't fix unless broken" IDEAL Preventative Breakdown Ratio = 0% Preventative, 100% Breakdown.

Category C = All assets being not A or B. Costs of breakdown have to be weighed against cost of preventative maintenance, experimentation is necessary and this experimentation will have to go beyond the desirable ratio in order to establish the limits. Prepare yourself for failures as you experiment. IDEA Preventative Breakdown Ratio = anywhere!

BACKLOG MAINTENANCE

What do we mean? Overdue? ('Who says?' or 'where's your cost justification?')

Consider distinguishing between functional maintenance and aesthetics, e.g. Housing Trust example [see "Who should make the strategic decision?" pp 5-6 in this issue and also "Backlog Maintenance- what is wrong with this as a concept?" pp 8-9 and "Backlog Maintenance: the problem, the definition, the answer", pp 10-11)

MAINTENANCE BUDGETING

Constant percentage allocation is very useful for workforce planning but the actual figure would vary between building types (e.g. high capital value: low maintenance *[designs]* and vice versa and allocation on a constant basis provides no incentive to innovation and cost reduction.

What figure? Average life cycle costs? - problem here is that there is no institutional mechanism to set money aside in the fat years to serve us in the lean years so money gets overspent in early years and there is a dearth of funds when we need them.

Combination approach - small percentage on basis of routine work plus special allocations determined by research backed replacement modelling.

SUMMARY

- Asset Management takes a forward look at the uses to be made of the asset, is customer and service oriented and focusses on value for money.
- Asset Management requires knowledge of user demand aspects as well as technical supply aspects.
- Any contractor can do maintenance. I believe public works departments have a real competitive advantage in Asset Management but they will need to market themselves to their clients, to Treasury - and to themselves.

KEYWORDS: Maintenance, Maintenance Planning, Backlog, Maintenance Budgeting

WHO SHOULD MAKE THE STRATEGIC DECISIONS?

(Why strategic decisions can blow your budget when they are made at the operational level)

Once you realise that strategic decisions are those that affect the directions of the organisation, it is clear they must be made at the corporate level, not the operational level. What may not be so obvious, however, is when this rule is being violated. Here are three examples.

Case 1: "Change the roofline"

Maintenance budgets were rising rapidly and the Housing Authority wanted to know why.

Closer inspection of the accounts revealed that the rise was not uniform across regions. After some rough adjustment for size and age of stock, it still seemed that the Northern region was considerably above Central, and Southern was rather below. Why the difference?

The Maintenance Director decided to call in his regional managers and find out. He showed them pictures of houses in need of repair and asked for their opinion on what needed to be done. The responses on roofs was particularly instructive.

Southern observed: That roof is leaking, I would patch the leaking section.
Central observed: That roof is leaking, I would replace the roof.
Northern observed: That roof is leaking, I would replace the roof, and while I was at it, I would change the roofline. (The northern region consisted of large housing estates with few variations in housing design.) The Maintenance Director considered these responses (and others that he received that day) and came up with a plan. Henceforth, action to correct the immediate problem (the leaking roof) was to be carried out without upward referral. Moreover the branch manager was free to make a case for replacing the entire roof or changing the roof line on aesthetic grounds if that was considered desirable. This case would then be considered at the corporate (strategic) level. In the event, very few business cases for aesthetic improvement were ever submitted and the maintenance budget was brought back into control.

What was happening here?

The operational asset management/ maintenance task was to 'fix the immediate problem'. Decisions to replace the entire roof to keep a uniform look, or to change the roofline to increase the aesthetics of the housing estate, need to be matters of corporate policy because they impact the entire portfolio. Allowing such decisions to be made at the operational, or individual asset level, without reference to corporate requirements can readily exceed budget limitations,

Case 2: "While we are at it..."

The 'While we are at it..' approach has hidden dangers. At first sight it seems a good idea to fix other problems that are noticed whilst out on a routine job. The Electricity Authority certainly thought so. It thought it would speed up maintenance since there would be less time travelling back to the same job. So it gave instructions to their operational/ maintenance personnel that when out on call-outs, if they saw other issues that needed attention, they could deal with them on the spot. This approach greatly appealed to the maintenance crews and they took it to heart. For example, if poles were considered defective when they were called out to fix a line break, they would replace the pole. The general attitude was 'this will save us having to come back out some time later'.

It wasn't long before each job was taking up to 4 times as long to complete. The waiting list of jobs to be attended to grew longer and longer. But worst of all, the entire maintenance budget for the year was expended in just 5 months! Eventually the maintenance director realised that in an endeavour to reduce call back time, the crews were effectively reducing the life of poles by too early replacement.

Case 3: "We had it at the last place"

In an endeavour to make use of surplus space in schools where populations had declined, the schools were opening up the spare classrooms as 'drop in centres', which were well patronised. So much so that when new schools were being designed, parent groups on the review committee would say that 'we had these centres in our last school' and the designer would then built into the new design something that was created purely to make use of surplus space. Now the standards had been defacto increased - and at no time had a corporate decision been made on the new, higher, standard! An individual asset 'solution' had now been extended to an entire portfolio - at considerable cost.

Keywords: maintenance, strategic decisions, housing, schools, electricity

WHAT'S THE ANSWER?

Having to refer ALL decisions up the line is grossly time consuming and delays much needed action.

BUT making strategic decisions (ie those that have portfolio wide ramifications) at the maintenance level without understanding the corporate impact is very expensive - and again, delays much needed action.

So what's the answer?

We are seeking two types of answer

1. From Experienced AMgrs and Consultants we are looking for **what has been tried - and worked!**

2. From Everybody, experienced or even very new to the field - **potentially different ways of doing things that have yet to be implemented but could work.**

200-500 words (the shorter it is, the more easy to read - and remember!)

DUE DATE: JUNE 30TH 2011

(but if you have a good idea and want more time, just email me - let no good idea go to waste!)

A Short Story: In conversation some years ago I was told of an Indian Village where a leaking roof needed to be reported first to the village chief, then to district manager, from there to the regional director, and through him to the State Director. Then once a decision had been, it was passed back down the same hierarchical structure. By this time 12-18 months had passed - and the monsoon rains had come and gone!

BACKLOG MAINTENANCE:

What is wrong with this as a concept?

Absolutely nothing, when used in the *right* context

And that is as an operational (maintenance management) measure - but a great deal when used as a strategic measure.

In business, whilst there are many definitions, the general idea of a maintenance backlog is that of 'maintenance tasks that are essential to repair, or prevent, equipment failures that have not been completed yet'.

As Daryl Mather points out "Few tools are as useful to managing the maintenance workload and effectiveness as the Maintenance Backlog. In many companies today management of the maintenance backlog has been neglected. As a result they are generally drowning in their own data. A poorly managed system has a dramatic effect on the entire delivery of maintenance services." The symptoms, he says, of poor backlog management include duplicated work orders, non-standardised entries, no indication of forward resource requirements, poor coding of work orders, lack of prioritisation and unrequired works. Dealing with these issues improves maintenance productivity. Backlog Maintenance is thus a maintenance KPI. Such a KPI is part of the Asset Managers tactical tool kit.

So, a very useful tool, in its right place.
But that place is not strategic decision making.

Unfortunately in the public sector (universities, government organisations) there has grown up the practice of using 'backlog maintenance' figures as a bludgeon to extract more money from decision makers. Every now and then this works and thus fuels the practice.

You may ask 'if it works, what is so wrong with it?'

At least, three things

1. **THE WRONG FOCUS**

While they consider that they will be rewarded with more funds, this only encourages operational asset managers to put their efforts into making the backlog figure as high as possible rather than to use their energies and creativeness to find ways to make it as *low* as possible. In other words it contributes to the problem rather than solving it.

2. **THE WRONG BALANCE**

It is one-sided. No assessment of Benefits only Costs. Backlog measures only costs, not benefits. In the Topeka press release benefits were not specified but described vaguely as " Because these buildings are a critical state asset, whose quality ultimately attracts or deters students, it's critical this issue remains an ongoing priority"

3. THE WRONG DECISION MAKING LEVEL

Often, in the public sector, backlog maintenance is defined as those items on previous years' budget requests that did not make the cut. The assumption is that all these items are not only warranted but urgent. But who makes this decision? It is the operational manager! The fact that the request did not get included in the budget is a good indication that at a higher level, it did not have sufficient priority.

HOW (not) TO USE BACKLOGS IN THE PUBLIC SECTOR

Make it look as big as possible - and growing

"Topeka — The backlog of maintenance and repair projects at the state's public universities continues to increase, although it fell slightly at Kansas University, according to a report released Thursday. The deferred maintenance backlog for 2010 was $876 million, *which is $51 million or 6 percent higher than in 2008. The backlog was $663 million in 2006. ....* The dollar amount of the backlog would have been even higher but the economic downturn held down construction, labor and material costs, the report said."

Report Wins because they encourage

" In 2007, legislators approved a five-year plan to address the problem. So far, about $63.7 million in state funds and $45.8 million in federal stimulus funds have been allocated for projects. Nearly 100 maintenance projects have been approved, 79 initiated and 42 completed. The projects include improvements to utility tunnels, waterlines, electrical systems, boiler replacements, Americans with Disability Act improvements and re-roofing.

But always ask for more

The report said that $92 million is needed each year to stop the list of projects from growing. Only $52 million was available in the last fiscal year.

The trouble is that no amount will ever be enough! Notice that in the list of items above are a number of 'improvement items'. There is never an end to improvement items.

In 1997 we ran a competition for readers comments on Backlog Maintenance, see "Backlog Maintenance: the Competition, the problem, the definition, the answer**" on pp 9-10**

Keywords: maintenance, backlog, maintenance efficiency,

Original Publication Date, September 1994 (reprinted April 2011)

BACKLOG MAINTENANCE: THE COMPETITION

(the problem, the definition, the answer)

When I started SAM in 1994 I ran quarterly case study competitions. The answers then still stand today! Here is the original challenge - and the winning answer.

COMPETITION SCENARIO

The staff meeting was in highly animated mode.

General Manager. "I am concerned. Our backlog maintenance is far too high. The figures here say $26M - that's more than three times our annual maintenance allowance."

Chief Accountant. "Sheer inefficiency! We should contract out all our maintenance."

Research Economist. "Look, this graph shows the average service life of one of our major assets is 15 years. 29% are now over 15 years that means 29% should have been replaced already!"

Operations Engineer. "Exactly what I was saying. If we had some ground rules here life would be easier. We should say that if an asset breaks down more than twice, the third time we should replace it and not attempt to patch it up any more. Then we would not be spending all of our money on breakdown maintenance, would would have some decent equipment to work with - and we wouldn't have a backlog."

Chief Accountant. "But at what cost? Each new machine costs over $2M. Surely we should be weighing the capital costs against the maintenance savings. And anyway who knows whether it is worth spending the $26M. What does it all mean?"

General Manager. **"Stop!. This is getting out of control. I am going to call in the experts."**

YOU are that expert! The GM asks you to give him an operational (i.e. measurable) definition of backlog. Is it maintenance, is it replacement, and what should he be attempting to do about it - and why? The GM is known for his refusal to accept all advice that exceeds one page!

The winner of our standard prize at the time - a subscription to SAM plus 6 bottles of premium SA red was awarded for the following entry, which I still reckon is the best answer anyone has ever given to the backlog issue for a public entity.

Dear GM

Maintenance Backlog is the 7 or 8 figure devised by technocrats to send you on a guilt trip about your obvious lack of concern for their unending endeavours to protect your assets. Numerically it is the difference between their letter to Santa and your gut feel of what they could live with.

Maintenance sustains functionality. Replacement alters the asset value. The demarcation is determined by the component detail level you choose to employ in your asset valuations.

Now, from your own corporate objectives you should be able to set serviceability targets for all your assets. Sort out with your bean counter the detail of your economic and financial performance indicators. Put all these numbers in the engineer's honourable PC and crank out the list of priorities.

The next bit is really difficult; so concentrate! Using your own value judgement and knowledge of competing pressures determine your funding limits and confirm your ability to maintain the serviceability targets. You will probably need to fine tune your serviceability targets and downgrade some replacement to holding maintenance.

At the end of the exercise you will have a series of unfunded items. **This is not a backlog. This is list of things which missed the cut in the company's overall priority schedule.** Throw the list in the bin because next year you have to repeat the entire process.

Your humble servant,

Brian Gallagher,

Northern Territory Transport and Works.

Keywords: Maintenance, Backlog